REMARKS

As of this response, claims 1-18, and 37-41 remain pending. Claims 19-36 are canceled as of this office action. In the present office action, claims 1-18, and 37-41 have been rejected. In this response, claims 1, 4-18, and 37-41 have been amended. The outstanding rejections and objections are summarized below.

Restriction Requirement

Applicants hereby affirm election of the invention of group I, claims 1-18 and 37-41. Claims 19-36 are hereby canceled.

Abstract

Applicants have amended the Abstract as shown above. Applicants believe that this amendment addresses that Examiner's rejection and respectfully request withdrawal of the rejection.

Rejection of Claims 1-15 under 35 USC 112, First Paragraph

Applicants note at the outset that the claims are presently amended to include metals from Groups 3 to 13 and the Lanthanide series of the Periodic Table of the Elements. Applicants respectfully traverse this rejection. Applicants assert that, in light of the numerous examples provided in the specification, one of ordinary skill in the art would know to use the same or substantially the same chemistry in order to arrive at compounds with other metal centers. The specification is replete with examples of Zr, Hf, and Cr compounds. The art is replete with examples of other metals used in polyolefin catalysts. For example, USPN 6,174,975 to Johnson, demonstrates the usefulness of Ni-based polyolefin catalysts. One of ordinary skill in

the art would know that the same or substantially the same chemistry as that taught in the instant specification may be used to produce polyolefin catalysts with metals from any of Groups 3 to 13 and the Lanthanide series. The ligand as it is defined in the instant specification, may be neutral or uni-negative (i.e., having a –1 charge). Using of any such ligand, it is possible to form the compound as written, and the metal need not have a minimum oxidation state of 3+. The Examiner is also directed to "Advanced Inorganic Chemistry" by Cotton and Wilkinson, Fourth Edition. Chapter 21 illustrates analogous compounds having a 2+ oxidation state. (a copy of part of that chapter is included for the Examiner's convenience).

Rejection of Claims 1-18 and 37-41 under 35 USC 112, Second Paragraph

Applicants respectfully traverse the Examiner's rejection as it pertains to the use of "Y" in the general formula. Applicants assert that one of skill in the art, when reading the specification and the claims, would know that "Y" is not yttrium, but rather as it is defined in the specification and the claims themselves. It is clear from both the specification and the amended claim language that "Y" is not yttrium. The specification makes abundantly clear (to the skilled artisan) that "Y" is not even a metal. Applicants also note that numerous issued U.S. patents, as well as other literature sources in this field of art use "Y" as a variable group indicator. For example, the Examiner is directed to USPN 6,610,627, which the Examiner himself cites in the present office action. Applicants respectfully request that the Examiner withdraw this rejection.

With respect to the inconsistent use of "catalyst precursor" and "catalyst precursor composition", Applicants have amended claims 1-18 where necessary to correct any inconsistencies. Applicants thank the Examiner for bringing this issue to their attention.

Applicants respectfully request that the Examiner withdraw this rejection with respect to this point.

Claim 1 has been amended to remove the dimeric species, and the subscripts on "L" have been corrected where needed. Applicants respectfully request that the Examiner withdraw this rejection with respect to these points. The amendments to the claims also obviate the Examiner's comment regarding the comma after "15". With respect to the Examiner's comment regarding "coordination ligand", Applicants assert that one of ordinary skill in the art, upon reading the instant specification, would know that L is either neutral or uni-negative. All of the examples throughout the specification and the teachings therein are consistent with this definition of "coordination ligand". Also, the Examiner is directed to paragraph [0012]. Claim 1 has been amended to include proper Markush language. The permissible atoms for "X" and "Y" have been amended. It should be noted that the bond between "X" and "M" is a dative bond. It is understood by those of ordinary skill in the art that such bonds to the metal center are dative bonds. For example, in U.S. Patent 6,174,975 to Johnson, a number of structures appear with a tatravalent nitrogen atom bound to the metal, demonstrating the one of ordinary skill in the art knows that this is a dative bond. As another example, Applicants provide a copy of selected portions of "Advanced Inorganic Chemistry" by Cotton and Wilkinson, Fourth Edition (copies of excerpts of which are submitted for the convenience of the Examiner). This text provides numerous examples of apparently tetravalent nitrogen atoms bound to metal centers, further demonstrating that one of skill in the art recognizes that such bonds to metal centers are dative bonds. In light of these amendments and arguments, Applicants believe that the Examiners

comment regarding overcoordination has been obviated. Applicants respectfully request that the Examiner withdraw the rejections with respect to the foregoing points.

Applicants respectfully traverse the Examiners rejection with respect to the terms "bulky" and "non-bulky". These terms are commonly used in the art and are also defined in the specification as precisely as the art allows. One of ordinary skill in the art, upon reading the instant specification and the claim language, would know which groups are bulky and which are non-bulky. Paragraphs [0017] and [0018] give definitions of these terms as precisely as the technology reasonably permits. Applicants respectfully request that the Examiner withdraw this rejection.

The Examiner asserts that the phrase "the atom adjacent to Y" in claims 3 has no antecedent basis. Applicants respectfully traverse the rejection. Although the phrase "atom adjacent to Y" does not appear in those identical words in claim 1, the expression has proper antecedent basis in the general structure of claim 1. Based on the structures of claim 1, T must have an atom adjacent to Y. Thus, although the exact words do not appear, Applicants assert that there is sufficient antecedent basis in claim 1. Applicants respectfully request that the Examiner withdraw this rejection.

In claim 4, the Examiner states that the term "dimethyl group" is indefinite. Applicants have amended claim 4 and believe that this clarifies what is claimed in claim 4. Applicants respectfully request that the Examiner withdraw this rejection in light of the amendment.

Applicants have amended claim 5 to recite proper Markush form and respectfully request that the Examiner withdraw this rejection in light of the amendment. Applicants have amended claim 6 to include an indefinite articles where necessary and have corrected other errors of form

as cited by the Examiner and respectfully request that the Examiner withdraw this rejection in light of the amendment. Applicants have amended claims 7 and 8 to address the Examiners comments and request withdrawal of the outstanding rejection. Claim 11 has been modified in such a way as to satisfy the Examiner's rejection; claim 13 has been amended to recite proper Markush format. Claim 15 has been amended to depend from claim 13. Applicants respectfully request that the Examiner withdraw the rejections in light of the amendments and arguments provided.

With respect to the Examiners rejection of claims 16 and 17, Applicants again note that those of ordinary skill in the art would recognize that the bonds from the imino nitrogen to the metal is a dative bond. Thus, although the imino nitrogen appears to tetravalent, it is in reality trivalent with a dative bond to the metal. With respect to the Examiner's comments regarding zirconium, Applicants believe that the Examiner is confusing coordination number with valency. While the Zr atom has a coordination number of 5, it is actually tetravalent when one considers the bond to the imino nitrogen is a dative bond. Accordingly, Applicants assert that there is no valency problem. Also, both claims 16 and 17 have been amended to recite proper Markush form. Applicants respectfully request that the Examiner withdraw the rejections with respect to the foregoing points.

With respect to claim 37, Applicants have amended the claim to remove the Markush language which introduced the general formula. The "n" has been subscripted as recommended by the Examiner. The limitation concerning the identity of "M" has been amended to remove the Markush language. The limitation regarding the possible identities of "L" has been amended to satisfy the Examiner's point. The limitation regarding the non-bulky substituent "R" and the

bulky substituent "R'" have been amended. In the amended claim, the "R" limitation is no longer in Markush format and the "R'" limitation is written in proper Markush format. Applicants respectfully traverse the Examiner's assertion that the term "sterically hindered with respect to which it is bonded" is ambiguous. The instant specification (at paragraph [0018]) gives more than adequate teaching such that one of ordinary skill in the art would understand this term. Given the numerous examples of possible "R'" species (see paragraph [0020]), Applicants assert that the skilled artisan would not find the term ambiguous. In light of the arguments and amendments, Applicants respectfully request withdrawal of the rejections entered with respect to the above items.

The preambles of claims 38 and 39 have been amended such that they are now consistent with that of claim 37. In reference to claim 39, the Examiner asserts that the term "dimethyl group" is indefinite because it does not state what it is a dimethyl group of. Applicants have amended claim 39 and believe that this clarifies what is claimed. The claim requires that the atom adjacent to the nitrogen group bonded to R' contain a dimethyl group. Applicants assert that this language is absolutely clear to one of ordinary skill in the art. Applicants respectfully request that the Examiner withdraw this rejection in light of the amendment.

Claim 40 has been amended to recite an activator. This was inadvertently omitted in the originally field claim. The instant specification has ample support for this amendment; see paragraphs [0034] – [0045]. Claim 41 has been amended for clarity; the Examiner is directed to Applicants response with respect to claim 39. The Examiner states that claim 40 suffers from the same deficiencies as claim 37. Claim 40 has been amended in the same way as claim 37; the arguments and amendment provided for claim 37 are equally applicable to claim 40.

Accordingly, Applicants assert that any deficiencies have been corrected. Because all of the Examiner's rejections under 35 USC § 112 have been adequately addressed, Applicants respectfully request that the Examiner withdraw all rejections under § 112.

Rejection of Claims 1-18 and 37-41 under 35 USC 102(e) over Matsui '724

The Examiner has rejected claims 1-18 and 37-41 under 35 USC § 102(e) as anticipated by USPN 6,399,724 to Matsui (Matsui '724). The Examiner asserts that Matsui '724, at col. 2, ll. 1-10, col. 15-26, col. 30-46, and col. 61-84 discloses the invention as claimed. Applicants respectfully traverse the rejection.

First, the structures of Matsui '724 differ from those of the present invention in that the Matsui structures possess an alkenyl group in the bridging group in addition to the imino double bond. Additionally, the instant claims have, as express positive limitations, R and R' as non-bulky and bulky substituents, respectively. This feature is not taught or disclosed anywhere in Matsui '724. The bulky and non-bulky substituents are specific features of the present invention. The absence of a teaching of them in Matsui '724 renders Matsui '724 an inappropriate reference under § 102(e). Accordingly, Applicants respectfully request that the Examiner withdraw the rejection under § 102(e) over Matsui '724.

Rejection of Claims 1-18 and 37-41 under 35 USC 102(e) over Bansleben '664

The Examiner has rejected claims 1-18 and 37-41 under 35 USC § 102(e) as anticipated by USPN 6,410,664 to Bansleben (Bansleben '664). The Examiner asserts that Bansleben '664,

in the abstract and at col. 3-4 discloses the invention as claimed. Applicants respectfully traverse the rejection.

The structures of Bansleben '664 differ from those of the instant invention in that the Bansleben structures have an aryl group fused to the bridging group connecting "A" and "N" (corresponding to "X" and "Y" in the instant claims). Additionally, the instant claims have, as express positive limitations, R and R' as non-bulky and bulky substituents, respectively. This feature is not taught as an important feature in Bansleben '664. The bulky and non-bulky substituents are specific features of the present invention. Because Bansleben '664 fails to teach these limitations, Applicants assert that it is an inappropriate reference under § 102(e). Accordingly, Applicants respectfully request that the Examiner withdraw the rejection under § 102(e) over Bansleben '664.

Rejection of Claims 1-15 under 35 USC 102(e) over Johnson '975

The Examiner has rejected claims 1-15 under 35 USC § 102(e) as anticipated by USPN 6,174,975 to Johnson (Johnson '975). The Examiner asserts that Johnson '975, at col. 1, l. 40, col. 1, 60 and col. 2, l. 35 discloses the invention as claimed. Applicants respectfully traverse the rejection.

The structures of Johnson '975 differ from those of the instant invention in that the Johnson '975 structures have aryl groups on both nitrogen atoms (corresponding to "X" and "Y" in the instant claims). Additionally, the instant claims have, as express positive limitations, R and R' as non-bulky and bulky substituents, respectively. This feature is not taught as an important feature in Johnson '975. The bulky and non-bulky substituents are specific features of

the present invention. The absence of a teaching of them in Johnson '975 renders Johnson '975 an inappropriate reference under § 102(e). Accordingly, Applicants respectfully request that the Examiner withdraw the rejection under § 102(e) over Johnson '975.

Rejection of Claims 1-18 and 37-41 under 35 USC 102(e) over Murray '627

The Examiner has rejected claims 1-18 and 37-41 under 35 USC § 102(e) as anticipated by USPN 6,610,627 to Murray (Murray '627). The Examiner asserts that Murray '627, at col. 5, l. 60; col. 8, l. 35; col. 9-10; col. 11. ll. 50 and 62; col. 12, l. 40; and col. 14, ll. 5 and 20 discloses the invention as claimed. Applicants respectfully traverse the rejection.

The structures of Murray '627 differ from those of the instant invention in that the Murray '627 structures have the equivalent of the imino nitrogen as part of a pyridine ring. In the instant claims, there are express positive limitations for R and R' as non-bulky and bulky substituents, respectively. In the instant invention the R group is bound to the imino nitrogen (where "X" = N). The instant claims that R be a non-bulky substituent with relatively low steric hindrace with respect to X. If R was pyridine, this condition would not be met. Thus, the structures of Murray '627 are different from those of the instant claims.

The instant claims have, as express positive limitations, R and R' as non-bulky and bulky substituents, respectively. This feature is not taught as an important feature in Murray '627. The bulky and non-bulky substituents are specific features of the present invention. Murray '627 fails as a proper § 102(e) reference because it does not teach these limitations. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection under § 102(e) over Murray '627.

Rejection of Claims 1-18 and 37-41 under 35 USC 102(a) over Boussie 2003/0153697

The Examiner has rejected claims 1-18 and 37-41 under 35 USC § 102(a) as anticipated by published U.S. patent application 2003/0153697 A1 to Boussie (Boussie '697). The Examiner asserts that Boussie '697, at page 3, formula I; page 4, [0047]; page 5, [0054]; page 6, [0062] and [0066]; page 7, [0069] discloses the invention as claimed. Applicants respectfully traverse the rejection.

Applicants assert that Boussie '697 fails as a prior art reference for the same reason as Murray '627. The structures of Boussie '697 differ from those of the instant invention in that the structures therein have the equivalent of the imino nitrogen as part of a pyridine ring. In the instant claims, there are express positive limitations for R and R' as non-bulky and bulky substituents, respectively. In the instant invention the R group is bound to the imino nitrogen (where "X" = N). The instant claims that R be a non-bulky substituent with relatively low steric hindrace with respect to X. If R was pyridine, this condition would not be met. Thus, the structures of Boussie '697 are different from those of the instant claims.

The instant claims have, as express positive limitations, R and R' as non-bulky and bulky substituents, respectively. This feature is not taught as an important feature in Boussie '697. The bulky and non-bulky substituents are specific features of the present invention. The absence of a teaching of these limitations in Boussie '697 renders Boussie '697 an inappropriate reference under § 102(e). Accordingly, Applicants respectfully request that the Examiner withdraw the rejection under § 102(a) over Boussie '697.

CONCLUSIONS

In light of the arguments made herein, Applicants also assert that the pending claims are now in condition for allowance. Because the Examiner's requirements have been satisfied, Applicants respectfully request withdrawal of the outstanding rejections. Accordingly, Applicants earnestly request allowance of the application. This is intended to be a complete response. If any issues remain outstanding, please contact the undersigned for resolution of the same.

Respectfully submitted,

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